

9-2
Adding and Subtracting
Rational
Expressions

LCM 24

of 8 and 12

$$2^3$$

$$2^2 \cdot 3$$

List all factors
to the highest power

$$2^3 \cdot 3 = 24$$

LCM

of
 $15a^2bc^3$
 $5 \cdot 3$

$16b^5c^2$
 2^4

$20a^3c^6$
 $2^2 \cdot 5$

$$2^4 \cdot 3 \cdot 5 a^3 b^5 c^6$$

$$\boxed{240a^3b^5c^6}$$

Ex:

$$\frac{5a^2 \cdot 7a^2b}{6b} + \frac{9^{+3}}{14a^2b^2} = \frac{35a^4b + 27}{42a^2b^2}$$

$$2 \cdot 3 \cdot 7 a^2 b^2$$

$$\frac{1 \times 3}{2} + \frac{1 \times 2}{3}$$

$$\frac{3}{6} + \frac{2}{6} = \frac{5}{6}$$

Ex:

$$\frac{x+10}{3x-15} - \frac{3(x+5)}{6x-30}$$

$$\frac{3(x-5)}{3(x-5)} \cdot \frac{6(x-5)}{2} = \frac{2x+20 - (3x+15)}{6(x-5)} = \frac{-x+5}{6(x-5)}$$

$$= -\frac{1}{6}$$

Do:

$$1. \frac{1}{x^2+2x+1} - \frac{1}{x^2-1} = \frac{x-1 - (x+1)}{(x+1)^2(x-1)}$$

$$= \frac{-2}{(x+1)^2(x-1)}$$

$$2. \frac{1}{y^2-y-2} + \frac{1}{y^2+y}$$

Ex:

$$\frac{a^{-1} - x^{-1}}{a^{-2} - x^{-2}} = \frac{\frac{1}{a} - \frac{1}{x}}{\frac{1}{a^2} - \frac{1}{x^2}}$$

$$\frac{\frac{x-a}{ax}}{\frac{x^2-a^2}{a^2x^2}} = \frac{ax}{x+a}$$

Do:

$$\frac{1 - \cancel{hk^{-1}}}{h^{-1} - k^{-1}} \quad \frac{1 - \frac{h}{k}}{\frac{1}{h} - \frac{1}{k}}$$

HW

p482-483

23-33odd

38-40